Principles of Agricultural Sciences

Course Description: Principles of Agricultural Sciences is designed to develop the basic theories and principles involved in animal science, agribusiness, agricultural mechanics, and natural resource management. The standards prepare students to choose among agricultural careers for the 21st century.

Note: It was the consensus of both the industry representatives and the teachers that a student who receives credit in Principles of Agricultural Sciences should not be awarded credit in Agriscience, and a student who receives credit in Agriscience should not be awarded credit in Principles of Agricultural Sciences.

Recommend Prerequisites: None

Recommended Credit: 1

Recommended Grade Level: 9th

Course Codes:** A10 – **5104** or A12 - **5154**

** Use A12 Course Code number for all programs. A10 should be used for 10 month programs only.

Principles of Agricultural Sciences

Standard 1.0

Explain the importance of agriculture in society.

Standard 2.0

Evaluate the theories of animal science as they pertain to the following areas: animal's role in the ecology, animal anatomy and taxonomy, nutrition, facilities, basic genetics and reproduction and identification and functions of basic livestock breeds.

Standard 3.0

Summarize the basic principles involved in agribusiness, including recordkeeping, leadership, principles of supply and demand and associated agribusiness careers.

Standard 4.0
Summarize the basic principles involved in agribusiness, including recordkeeping, leadership, principles of supply and demand and associated agribusiness careers.

Standard 5.0

Investigate the principles involved in soil structure and formation, plant taxonomy, soil conservation and water quality, soil and plant relationships and ecology.

Standard 6.0

Utilize mathematical computations and agricultural lab equipment for basic agricultural construction.

Standard 7.0

Demonstrate premier leadership and personal growth in the area of Fundamentals of Agriculture.

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Standard 1.0

Explain the importance of agriculture in society.

Learning Expectations and Performance Indicators:

1.1 Summarize the importance of agriculture to Tennessee's economy.
1.2 Explain the political impact of Agriscience at the local, state, national and international levels.
1.3 Specify and explain role of the major careers in Agriscience and agriculture.
1.4 Specify and explain the impact of technological advancement in agriculture.
1.5 Analyze the relationships of plants and animals in our society.
1.6 Analyze the desired effects of leadership on world agriculture production.

Standard 2.0

Evaluate the theories of animal science as they pertain to the following areas: animal's role in the ecology, animal anatomy and taxonomy, nutrition, facilities, basic genetics and reproduction and identification and functions of basic livestock breeds.

Learning Expectations and Performance Indicators:

2.1 Analyze the basic role of animals in the environment.
2.2 Specify and explain the relationship between companion and production animals in society.
2.3 Examine and explain the concepts of basic animal anatomy and taxonomy, including life's basic unit (cell) and the functions of the organ systems.
2.4 Describe the classes of feed needed by animals.
2.5 Evaluate and explain the importance of waste management.
2.6 Summarize the basic principles involved in reproduction and genetics.
2.7 Recognize and describe the functions of the basic breeds of livestock.

Standard 3.0

Determine the fundamental relationships of wildlife populations and environmental conditions in our natural habitats.

Learning Expectations and Performance Indicators:

3.1 Summarize terms associated with ecology and conservation.
3.2 Analyze the major components of a food chain in nature.
3.3 Analyze the main parts of the water cycle.
3.4 Examine the main flow of carbon dioxide and oxygen between plants and animals.
3.5 Diagram the parts of the nitrogen cycle.
3.6 Distinguish types of pollution and their sources.
3.7 Determine how the carrying capacity of an ecosystem is affected by interactions among species and organisms.

Standard 4.0

Summarize the basic principles involved in agribusiness, including recordkeeping, leadership, principles of supply and demand and associated agribusiness careers.

Learning Expectations and Performance Indicators:

4.1 Illustrate the basic principles of supply and demand and their relationship to production.
4.2 Summarize the basic principles involved in financial recordkeeping and accounting.
4.3 Demonstrate the ability to keep records for a Supervised Agricultural Experience program.
4.4 Evaluate career opportunities in agriculture.
4.5 Analyze the principles involved in reading a financial statement and planning a budget.
4.6 Utilize the principles involved in problem solving.
4.7 Identify and explain the roles of oral and written communications in agribusiness.
4.8 Explain and demonstrate basic parliamentary law used in business.

Standard 5.0

Investigate the principles involved in soil structure and formation, plant taxonomy, soil conservation and water quality, soil and plant relationships and ecology.

Learning Expectations and Performance Indicators:

5.1 Examine the basic principles of soil texture, structure and formation.
5.2 Analyze the relationship between soil, plants and nutrients.
5.3 Evaluate the role of ecology in the environment.
5.4 Assess the importance of soil, water and air quality.
5.5 Relate plant processes to plant health and growth.
5.6 Differentiate between sexual and asexual reproduction.

Standard 6.0

Utilize mathematical computations and agricultural lab equipment for basic agricultural construction.

Learning Expectations and Performance Indicators:

6.1 Identify and demonstrate general safety precautions involved in general shop work and tool use, metalworking and electricity.

6.2 Identify and categorize common tools, give the application of each and describe its maintenance.

6.3 Outline principles and fundamentals of internal combustion engines.

6.4 Specify common building materials and estimate the cost of the materials.

6.5 Use the formula involved in figuring areas of different geometric figures.

6.6 Use a measurement device to determine materials needed for a project.

6.7 Complete a safety test with 100 percent accuracy.

Standard 7.0

Demonstrate premier leadership and personal growth in the area of Fundamentals of Agriculture.

Learning Expectations and Performance Indicators:

7.1 Demonstrate a positive work ethic and attitude.

7.2 Demonstrate proper time management skills.

7.3 Apply problem-solving skills.

7.4 Describe career plans that develop critical life-long thinking skills and allow for life long learning.

7.5 Write a grammatically correct speech on the importance of agriculture in our society.

7.6 Demonstrate the ability to conduct a meeting in accordance with Robert's Rules of Order.